



## Girls Academic Leadership Academy

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# Computer Science Discoveries

2017-2018

Grade-Level Theme:  
Change and Transition

## Course Description

This course starts with teaching foundational skills in problem solving that can be applied in many situations. Students then apply the problem solving process to programming animations and games. Assignments will be posted on [www.mrlanda.com/disco.html](http://www.mrlanda.com/disco.html)



### GOALS

- Apply the Problem Solving Process
- Implement Creative solutions
- Understand how computers solve problems

## Course Topics:

1. Problem Solving Process
2. Computers and Problem Solving
3. Images and Animations
4. Building Games

## Required Materials

The following is a required supplies list:

1. Pens & Pencils
2. Notebook
3. USB Flash Drive (optional)

## Course Texts:

Code.org's Computer Science Discoveries Curriculum ([curriculum.code.org/csd/](http://curriculum.code.org/csd/))

## Classroom Expectations

- ALWAYS TRY THE PROBLEM
- SHARE YOUR KNOWLEDGE
- TEACH OTHERS
- TAKE RISKS
- EXPLORE

## School Expectations

- SHOW RESPECT
- COME TO CLASS PREPARED
- PARTICIPATE FULLY
- MAKE MISTAKES
- SPEAK POSITIVELY
- ALWAYS DO YOUR BEST

## Assessments:

**Minor assessments:** Minor assessments are not scored for correctness (unless otherwise noted). Their purpose is to inform our learning practices in the moment and let us know if it's okay to move on or if we need more instruction.

*Examples:*

- Classwork handouts
- Homework
- Journals

**Major assessments:** Major assessments are formally scored for DEPTH OF UNDERSTANDING rather than percentages. Although these assessments are formal, they are not permanent; students still have the opportunity to demonstrate mastery for full credit. Understanding "course content" later than expected is not shameful, and students' hard work should be recognized with equal scores as their peers who caught on more quickly.

*Examples:*

- Projects
- Presentations
- Project Reflections

## Grading Scale

Semester grades are determined by level of mastery as described below:

Grade	1 <sup>st</sup> Semester Criteria	2 <sup>nd</sup> Semester Criteria
A	>50% of Learning Targets at 3.5 or higher AND NO Learning Targets below a 3	>75% of Learning Targets at 3.5 or higher AND NO Learning Targets below a 3
B	> 50% of Learning Targets at a 3 or higher AND NO Learning Targets below a 2	> 75% of Learning Targets at 3 or higher AND NO Learning Targets below a 2
C	NO Learning Targets below a 2	NO Learning Targets below a 2
D	Maximum of 3 Learning Targets below a 2	Maximum of 3 Learning Targets below a 2
F	More than 3 Learning Targets below a 2	More than 3 Learning Targets below a 2

## Mastery Rubric

Students are given multiple opportunities to demonstrate proficiency, and all graded assignments include rubrics with areas of focus for particular assignments.

4-Point Rubric	Description
4	In addition to a level 3 performance, in-depth inferences and applications go beyond what was explicitly taught in class.
3	No major errors or omissions regarding any of the information and/or processes that were explicitly taught in class.
2	No major errors or omissions regarding the simpler details and processes, but major omissions or errors regarding the complex ideas and processes.
1	With help, a partial knowledge of details and processes.

## Grading Policy

This course and the grading policy are designed to emphasize the idea that growth is possible, and supported by giving students the opportunity to see what they are doing well and where they can improve. The goal is to elicit more meaningful responses to feedback and more accurately reflect students' progress towards mastery.

Grades are determined by using multiple assessments to gauge mastery of each learning target. Because students are given multiple opportunities to demonstrate proficiency, students are expected to demonstrate growth throughout each semester.

## Academic Honesty

Students at GALA are expected to make choices that reflect excellence, leadership, wellness, and honor. As a GALA student, you will:

- Trust the value of your own intellect
- Demonstrate your own achievement
- Accept corrections as part of the learning process
- Undertake research honestly and credit others for their work

Adapted from: <https://integrity.mit.edu/>

	<b>Learning Targets for Unit 1: The Problem Solving Process</b>
<b>LT1</b>	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
<b>LT2</b>	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.
<b>LT3</b>	Model how computer hardware and software work together as a system to accomplish tasks.
<b>LT4</b>	Use flowcharts and/or pseudocode to address complex problems as algorithms.
<b>LT5</b>	Systematically test and refine programs using a range of test cases.
<b>LT6</b>	Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options.
<b>LT7</b>	Design projects that combine hardware and software components to collect and exchange data.